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UMATILLA RIVER SUBBASIN FISH HABITAT IMPROVEMENT PROJECT

1991 **Annual** Report

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ABSTRACT

This annual report is in fulfillment of contract obligations with Bonneville Power Administration which is the funding source for the Oregon Department of Fish and Wildlife's Umatilla Basin Habitat Improvement Project.

In May of this year a thirty year flood event occurred in the Umatilla Basin that resulted in major changes to the year's statement of work and to the future direction of the program. All projects in the Birch Creek drainage sustained damage to either fencing or instream work, with severe damages on about 1/3 of the project areas. As a result of flooding, and subsequent maintenance demands, all new project implementation in the Birch Creek drainage was cancelled; the entire implementation season was spent repairing flood damages in the Birch Creek drainage. The Major activities undertaken during this report period were: a) construction of 0.5 miles of riparian corridor fence on Meacham Creek, b) performing intensive instream maintenance on 3.25 miles of Mainstem Birch and East Birch creeks, c) performing major fence maintenance on 1.8 miles of flood damaged riparian corridor fence, d) rebuilding of 0.5 miles of flood destroyed fence, and 54 stream crossing fences, e) retrofitting of three miles of high tensile fence with an extended electric wire, and f) spending considerable time working with landowners to resolve flood related problems and come to agreement on project maintenance activities. Other activities undertaken during this report period were: weekly inspection and maintenance of fencing projects, collection and summarization of temperature data, photopoint picture taking, procurement of instream work permits, and coordination with numerous agencies and tribes.

INTRODUCTION

The Northwest Power Planning Council's Fish and Wildlife Program (NPPC 1983) calls for the rehabilitation of steelhead and salmon populations in the Umatilla River [Section 303) (c) (1) to partially mitigate for losses due to the Federal Columbia River Power System. Historically, the Umatilla had large runs of spring and fall chinook salmon, which supported productive Indian and non-Indian fisheries. Most chinook were eliminated from the Umatilla over 80 years ago although a few spring chinook salmon were observed as recently as 1963 (OGC 1963) and fall chinook as recently as 1953 (Thompson and Haas 1960). Annual runs of summer steelhead have averaged 2,135 adults during the past decade with a low of 768 in 1981-82 and high of 3,124 in 1986-87 [Table 1). The Oregon Department of Fish and Wildlife (ODFW) and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) are currently implementing a major salmon reestablishment program in the Umatilla Basin. Fall chinook began returning to the river starting in 1985, spring chinook in 1988 and coho in 1989 (Tables 2, 3 and 4).

Reasons for the decline of anadromous fish in the Umatilla River include passage problems at Columbia and Umatilla River dams and degradation of the quality and quantity of spawning and rearing habitat. Reduction in the amount of riparian habitat along the Umatilla River tributaries contributes to poor stream conditions, which resulted in: 1) greater seasonal variation in flows and water temperatures, 2) unstable streambanks, 3) decreased production of food organisms used by fish, and 4) loss of instream and streamside cover (USFWS and NMFS 1982). Approximately 70% of the 422 stream miles inventoried in the Umatilla River Basin need riparian rehabilitation (USFWS and NMFS 1982). Intermittent or nonexistent summer flows in some sections of Meacham, Squaw, Wildhorse; and Birch creeks are due in part to extensive losses of riparian vegetation.

The Umatilla Basin has three agencies working on habitat enhancement projects on their respective lands of jurisdiction: Confederated Tribes of the Umatilla Indian Reservation on reservation lands; United States Department of Agriculture Forest Service (USFS) on Umatilla National Forest lands; and Oregon Department of Fish and Wildlife on private lands.

In May of this year a thirty-year flood occurred in the Umatilla Basin that resulted in major changes to the program. All projects in the Birch Creek drainage sustained damages to either fencing or instream work or both. Severe damages occurred on about 1/3 of the project areas. All new project implementation in the Birch Creek drainage was canceled and money and personnel were shifted to do maintenance on existing projects.

TABLE 1. THREE MILE DAM /1, UMATILLA RIVER SUMMER STEELHEAD COUNTS

YEAR /2	TOTAL ADULTS
1979-80	2,367
1980-81	1,298
1981-82	768
1982-83	1,264
1983-84	2,062
1984-85	3,436
1985-86	2,959
1986-87	3,124
1987-88	2,481
1988-89	2,476 /3
1989-90	1,694
1990-91	1,111

/1 See Figure 1 for the location of Three Mile Dam within the Umatilla Basin.

/2 September 1 through June 30.

/3 Trap shut down for extreme cold weather from 2-2-89 to 2-24-89.

TABLE 2. THREE MILE DAM, UMATILLA RIVER SPRING CHINOOK COUNTS

YEAR	TOTAL	
	<u>/ ADULT</u>	<u>JACK</u>
1988	13	0
1989	66	98
1990	2,158	32
1991	1,291	39

/1 Adults are greater than 24 inches in length.

/2 Jacks are precocious fish less than 24 inches in length.

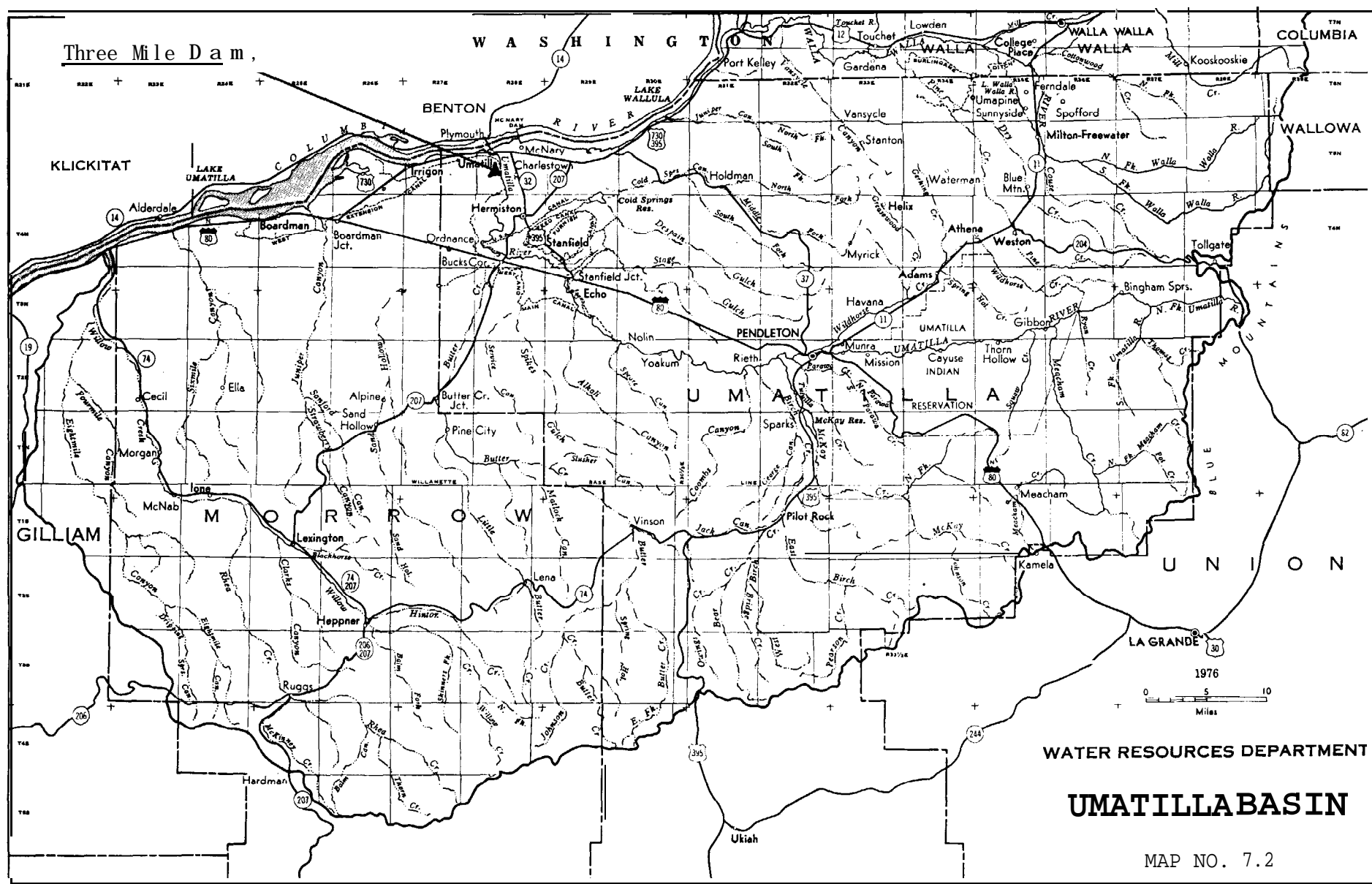


Figure 1. Location of Three Mile Dam within the Umatilla subbasin.

TABLE 3. THREE MILE DAM, UMATILLA RIVER FALL CHINOOK COUNTS

YEAR	TOTAL		
	<u>ADULT</u> / 1	JACK / 2	<u>SUBJACK</u> / 3
1985	6	79	0
1986	27	447 / 4	0
1983	52	52	295
1988	94	176	1,283
1989	279	247	76
1990	333	107	621
1991	522	466	274

/1 Adults are greater than 24 inches in length.

/2 Jacks are precocially mature fish between 18 and 24 inches in length.

/3 Subjacks are precocially mature fish less than 18 inches in length.

/4 A combination of jacks and subjacks.

TABLE 4. THREE MILE DAM, UMATILLA RIVER COHO COUNTS

YEAR	TOTAL	
	<u>ADULT</u> / 1	JACK / 2
1907	0	29
1988	742	610
1989	3,694	507
1990	409	511
1991	1,733	187

/1 Adults are greater than 20 inches in length.

/2 Jacks are precocially mature fish less than 20 inches in length.

Two major decisions were made regarding future program direction based on problems brought to our attention from the flooding. 1) No new projects will be developed on Birch Creek below the city of Pilot Rock, and 2) new project implementation will be targeted for the upper mainstems and tributaries of upper East Birch, West Birch and Meacham creeks. These decisions are based on four perceptions about lower Birch Creek below Pilot Rock: 1) upper watershed problems must be corrected before enhancement efforts on lower Birch Creek can succeed, 2) treatments being implemented are very expensive and may outweigh the fisheries benefits derived, 3) project maintenance costs are excessively high, and 4) the treatments being implemented are resulting in landowner conflicts.

A proposal has been submitted to BPA to add tributaries to the current implementation plan (ODFW 1988). Over the next year the program will focus on developing projects in the upper watershed.

DESCRIPTION OF AREA

The Umatilla River, in northeast Oregon, originates on the western slopes of the Blue Mountains just east of Pendleton. The river flows in a northwesterly direction for approximately **115** miles to its confluence with the Columbia River at River Mile 289 near Umatilla, Oregon [Figure 2). The Umatilla River drains approximately 2,300 square miles and has an average runoff of about 319,500 acre-feet **gaged at the** city of Umatilla. **In** downstream order, major tributaries **of the** Umatilla River are: North and South Forks of the Umatilla **River; and Meacham, McKay, Birch, and Butter creeks.**

Intensive agriculture (dry land **and irrigated crops**) **is the** dominant **land use** throughout the lower Umatilla Basin while timber harvest and livestock grazing are the predominant uses in the upper basin. **Intensive uses of** land adjacent to waterways has **led** to dramatic **changes in** their characteristics. Channelizing [straightening) and **vegetation removal** have turned many of the streams in the basin into relatively straight and deeply incised **channels with** major erosive problems. Streams in the forested areas of the basin are generally in a more natural **condition** than those in agricultural areas.

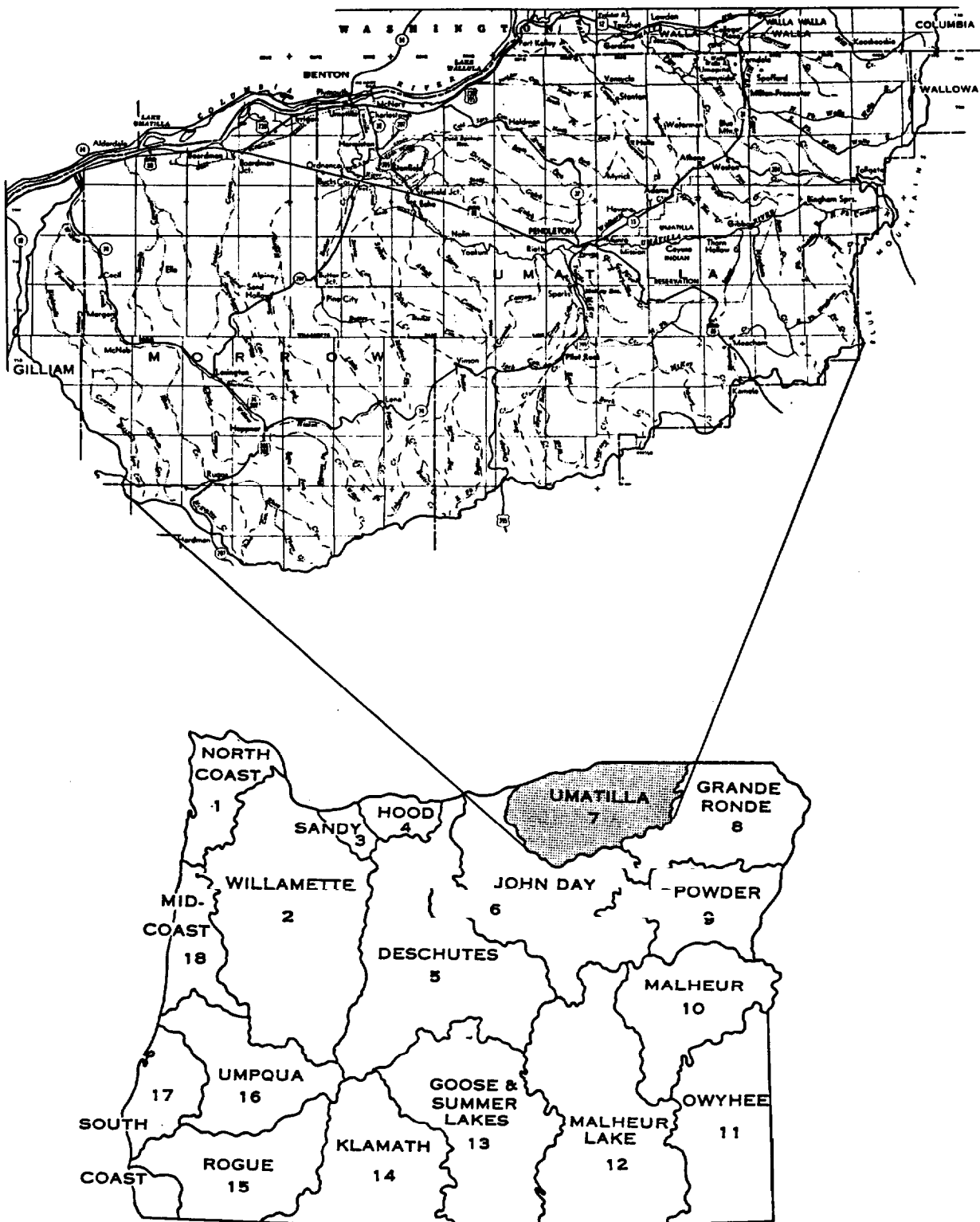


Figure 2. Location of the Umatilla subbasin within Oregon.

METHODS AND MATERIALS

The goal of this program is to optimize spring chinook and summer steelhead smolt production within the Umatilla River Basin using habitat enhancement measures. To accomplish this goal, work has progressed in three phases:

1. planning and preparation (**prework**)
2. implementation, and
3. maintenance and evaluation [postwork]

Prework

Prior to actual project implementation the following activities are to be conducted:

1. Riparian Lease Development and Procurement. Riparian lease development and procurement includes meeting with landowners and/or their legal representative³ specifically for the purpose of developing an acceptable lease text, and/or signing lease documents.

Riparian lease procurement is the most critical facet of the program. Without landowner leases the program cannot function. Inherent problems that arise when dealing with landowners make this the most difficult program activity. Landowners receive no monetary compensation for signing a lease, and fringe benefits provided to the landowner as compensation are marginal at best. To compound the problem the lease becomes an encumbrance on the property title for fifteen years, thereby making this program a low priority for most landowners. To further these difficulties, these landowners are farmers and ranchers who can be very difficult to contact.

2. Project Planning. Project planning includes design and layout of all work to be done on-site, landowner coordination, development of contracts and contract specifications, and obtaining necessary work permits.

- a. Design and Layout. The layout of fencing projects **is** usually completed while lease negotiations take place. Considerable time is spent undertaking this task to produce a fence line that is structurally feasible and meets the objective³ of the State and the landowner.

Design and layout of **instream** structures consists of on-site layout of structures and the development of design criteria for construction purposes. Landowners are usually given the opportunity to review and comment on design and layout of **instream** structures. The actual quantity and design of structures, however, is

determined by the biologist, with input from other professionals.

b. Landowner Coordination. Landowner coordination is an integral part of planning, implementation and maintenance for all projects. Access, ground conditions, and implementation timing are all important considerations to reduce impacts on landowner's operations.

c. Development of Contracts. Contract documents are developed for all major implementation and maintenance projects. Considerable time is required to develop and collate written contract document components.

d. Obtaininn Work Permits. Fill and removal permits must be obtained for all instream projects that involve removal or fill in a waterway. Permits must be obtained from the Army Corps of Engineers, Oregon Division of State Lands, and the Umatilla County Planning Department. The development of permit applications, and correspondence with these agencies requires considerable time.

3. Project Preparation. Prior to signing leases or construction contracts, all lease boundaries and work sites must be identified, staked and agreed upon by the landowner and/or contractor. Work sites may include right-of-ways, fences, instream structures, off-site water developments, planting, and miscellaneous lease or construction related areas.

4. Field inventories. Inventories and surveys needed for planning and developing project implementation.

Implementation

Implementation entails the actual on-the-ground work phase of the program and may include any or all of the following:

1. Instream Work. During late summer and early fall when streamflows are lowest, structures are installed in streams at locations preselected by fishery biologists and/or hydrologists. Structures of various types are used to stabilize streambanks, provide optimum pool/riffle ratios, raise riparian water tables, and collect spawning gravels; thereby increasing quantity and quality of rearing and spawning habitats.

2. Planting. During early spring, shrub and/or tree species are planted at preselected locations along streams within project areas. Since high summer water temperature is a major limiting factor, plantings are made to provide stream shade, thereby reducing summer water temperatures and

increasing salmonid utilization. Maximum shade attainable for most streams in project areas is about 80 percent. The objective of this phase of the program is to reach a minimum of 70% shade and have water temperatures of no more than 68 F within 20 years of project implementation.

During the spring and fall, areas disturbed while doing implementation activities are seeded to stabilize soils and discourage weed growth.

3. Fencing. Destruction of streamside vegetation by domestic livestock has been a major problem within project areas. To provide protection from livestock and thereby promote rapid recovery of existing and planted vegetation, fences are constructed along riparian zones within project areas.

4. Photopoint Establishment. Photopoint establishment includes locating and placing permanent markers at sites from which photographs are to be taken at regular intervals, thereby depicting riparian changes through time. Also associated with photopoint establishment is development of a photopoint notebook for each stream.

Postwork

Postwork entails all maintenance and evaluation of work which has been done within the project areas. This phase of the program will usually begin the year following completion of implementation and will continue for the duration of the project. Typical postwork activities may include:

1. Maintenance. Following completion of implementation an annual inspection of all project areas is made. Following this inspection all fence and instream structure maintenance is done. Because of the intensive use of livestock along many project areas, fence inspection and maintenance is a year around activity.

Since many projects are within areas of intensive agriculture, noxious weed control is necessary. Project areas are monitored throughout the spring and summer for noxious weed occurrence. When discovered these weeds are either sprayed with herbicides or manually removed.

2. Photopoint Picture Taking. Standardized pictures are taken from preselected photopoints prior to implementation of any project area, and then during the fall of each year. Over time these photopoints will provide a visual record of changes that occur on project streams; they will show the overall healing process resulting from riparian fencing, planting and instream structures.

3. Thermograph Data Collection. Thermographs are installed within or adjacent to project areas. These thermographs are monitored on a regular basis to gather baseline data and detect changes in water temperatures.

RESULTS AND DISCUSSION I. FIELD ACTIVITIES

Field activities are broken down into three successive phases: 1) prework, 2) implementation, and 3) postwork.

Pework

Pework is broken down into four successive stages: 1) riparian lease development and procurement, 2) project planning, 3) project preparation, and 4) field inventories.

1. Riparian Lease Development and Procurement. With changes in program direction and the magnitude of maintenance activities undertaken, little time was available for lease development and procurement. At the writing of this report no leases have been procured, however there is one lease under development to enhance approximately 0.35 miles of Twomile Creek, a tributary to Meacham Creek.

A difficulty encountered when dealing with landowners of streams in the upper watersheds, unlike in the lower watershed, has been that in many cases there is little incentive for the landowner to participate in the program. Few landowners in this area wish to cooperate in a program in which the sole benefit to them is an improved riparian area. If the rancher has no need for additional fencing, and can't be convinced of the positive benefits of riparian management, then there will be no opportunity to improve important fish habitat, in the near future. If the goal is to treat a significant portion of the upper watershed, it may become necessary to offer additional incentives to landowners to increase participation.

Two leases were terminated in 1991 resulting from the change of program direction. Several more leases may be terminated in 1992 because of change in program direction and unreconcilable differences between landowner's and the State resulting from flood damage. See the Discussion for further details.

2. Project Planning. There are four stages included in project planning: a) design and layout, b) landowner coordination, c) development of contracts and contract specifications, and d) obtaining work permits.

a. Design and Layout. After flood waters receded all fencing (13.5 miles) and instream structures (7.25 miles) were inspected and damages assessed.

Immediate plans were made for quick, temporary repairs to all fences under current use and then fencing that would have use later in the summer. After fences needing immediate attention were temporarily repaired, plans were made to make permanent repairs.

Plans were developed for instream maintenance activities on 7.25 miles of Mainstem Birch and East Birch creeks. This included repair of existing structures and placement of new structures to protect fencelines and or areas of high resource value.

b. Landowner Coordination. A considerable amount of time was spent coordinating with landowners when developing plans for implementation and maintenance. Because flooding not only caused damage to our projects, but to adjacent private land, considerable time was spent talking with landowners to resolve differences over project objectives versus land use objectives.

c. Development of Contracts. Eight construction contracts were developed to complete instream maintenance activities on Mainstem Birch and East Birch creeks. These contracts included: Straughan/Neal Rock Material, McDaniel/Rhinhardt Rock Material, Gambill/Weinke Rock Material, Lower, Middle and Upper Birch Creek Instream Placement, East Birch Creek Instream, and Upper East Birch Creek Instream Placement.

One high tensile smooth wire fence contract was prepared for the Meachem Creek project.

d. Obtaining Work Permits. Project personnel coordinated with the Division of State Lands (DSL) and Army Corps of Engineers to secure nine fill and removal permits for 1991 instream maintenance work. Project personnel also coordinated with county planners to secure nine county development permits for fill in designated floodways. Considerable time was required to prepare applications and correspond with these agencies.

Assistance and agency coordination was provided to landowners to secure fill and removal permits for instream work approved by ODFW for landowners to complete on project areas.

County land use permits were received for the development of two rock quarries along Birch Creek for project implementation. The application process, including two public hearings, took considerable time to coordinate with county planning department personnel and landowners. Subsequently, Contractors chose not to use the two quarry sites because of excessive development costs which were partially attributable to stipulations of the conditional use permits. These

conditional use permits are effective through the 1992 implementation season.

3. Protect Preparation. All instream work sites were staked or otherwise identified. Dump truck access routes were developed and riparian corridor fencing was removed by project personnel prior to the commencement of instream work.

The Meacham Creek fenceline was staked prior to the pre-bid tour and then again before construction began.

4. Field inventories. The biologist surveyed Meacham Creek tributaries to determine their potential for project implementation.

Implementation

New Habitat improvement projects were implemented on 0.5 miles of Meacham Creek. All other implementation activities were restricted to repairing flood damages and will be discussed under Maintenance (Table 51).

1. Instream Work. No new instream projects were implemented in 1991.

2. Planting. Planting activities were undertaken on East Birch and Meacham creeks in March and April. However, since plantings were done before flooding, most planted on Birch Creek were washed out. All trees and shrubs planted, except the willow cuttings, were purchased with State upland bird stamp funds. Willow cuttings were collected from the Rhinhart property. See Table 6.

Table 6. Summary of trees and shrubs planted in 1991.

Landowner	species				
	willow cuttings	woody rose	black cottonwood	red-osier dogwood	russian olive
F. Straughan		100			
J. Straughan		150		50	
McDaniel	1,000	50	100	50	15
Rhinhart	100				
Hemphill			100		
Gambill			50	50	
Magic Mile			50		
Louisiana Pac.				75	
Total	1,100	300	300	225	15

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/1 All instream work implemented in 1991 was repair of flood damages.

All ground disturbed by instream maintenance activities was seeded with a mixture of tall fescue, alcar tall wheatgrass and yellow blossom sweet clover.

3. Fencing. An additional 0.5 miles of 6 strand high tensile smooth wire fence was built on the Louisiana Pacific Meacham Creek property which makes a total of 1.4 miles of fence and 1.25 miles of stream protected on this property.

4. Photopoint Establishment. One new photopoint was added on the F. Straughan property.

Postwork

1. Maintenance. Approximately 13.5 miles of project fencing and 7.25 miles of instream work were inspected and damages assessed.

As a result of flooding, 1.2 miles of riparian corridor fence was destroyed. At the end of this report period approximately 0.5 miles of this has been rebuilt. The remaining 0.7 miles has been temporarily replaced with electric fencing until it can be replaced in the spring of 1992.

In addition, approximately 1.6 miles of riparian corridor fence in need of major maintenance (damaged structures, wires, etc.) was repaired. The majority of remaining corridor fence (10.5 miles) was in need of light maintenance (clearing debris, tightening wires etc.) Approximately half of this light maintenance was completed; the remaining will be repaired in the summer of 1992.

All sixty-four stream crossing fences were lost in the Birch Creek drainage due to flooding. To date 54 of these have been replaced and the remaining ten will either be replaced when needed or not replaced at all. Many of the repaired crossings will need further work to bring them up to desired conditions.

Twenty-one of the repaired stream crossing fences where there have been problems with livestock getting through, were replaced with electric fences. This has proven to be very effective since there has been no livestock entry since they were installed.

Approximately 3.0 miles of project corridor fencing was retrofitted with a single strand of electric wire extended out from the fence; this was done on the F.E. Straughan, J. Straughan, McDaniel, Hemphill, and Gambill properties. At these locations the fence receives considerable pressure from almost year-around cattle grazing. During the fall of the year this often resulted in the livestock entering the riparian area. The Installation of an electric wire along

these fences has effectively reduced wear on the fence and entry of livestock into the riparian area.

All instream projects completed on Mainstem Birch and East Birch creeks (7.25 miles) required maintenance as a result of the May flooding. Maintenance activities included adding additional rock to and repairing existing structures, modifying existing structures so that they accomplish their intended objective, adding new structures where the stream washed outside of the fenceline, adding new structures where a fenceline was in immediate threat of being washed out, and adding new structures to protect areas of high resource value. Following is a summary of the work completed:

Mainstem Birch Creek

T. Neal

- 100 cubic yards riprap to repair two existing structures.
- 210 cubic yards new riprap. Continuation of last years implementation.

J. Straughan

- Two new jetties.
- 120 cubic yards new riprap. Continuation of last years implementation.
- 50 cubic yards riprap to repair existing structure.

F.E. Straughan

- 11 new rock jetties.
- 60 cubic yards new riprap.
- Repair toe rocks with 29 boulders.

D. McDaniel

- Three new jetties.
- 530 cubic yards new riprap.
- 135 cubic yards riprap to repair existing structures.
- 60 cubic yards riprap to repair water gaps.

0. Flinhart

- Four new rock jetties.
- Repaired four rock jetties.
- Repaired one boulder deflector.
- 270 cubic yards of riprap to repair three existing structures.

8. Weinke

- 36 cubic yards riprap to repair existing structure.
- 108 cubic yards new riprap.

C. Hoeft

- One new rock jetty.
- 120 cubic yards riprap to repair two existing structures.

W. Weinke

- Seven new rock jetties.
- One new rock jetty with root wad.
- 216 cubic yards riprap to repair existing structure.
- Repaired existing rock deflector.

Y. Gambill

- Five new rock jetties.
- One new rock jetty with root wad.
- 108 cubic yards riprap to repair two existing structures.
- 250 cubic yards new riprap.

East Birch Creek

Magic Mile

- Used bulldozer to replace active channel back within leased area.

Houser

- Two new rock jetties.
- 150 cubic yards new riprap.
- Repaired three rock jetties.
- 100 cubic yards riprap to repair existing structure.

Since many project sites are associated with intensive agriculture, weed control is of particular concern to participating landowners. Weed control was required on all properties except for Louisiana Pacific's properties. Targeted species for control were mainly scotch and Canadian thistle. Methods for weed eradication included use of herbicides, and manual removal.

Large cottonwood trees on the McDaniel and Rhinhart properties were wrapped with wire mesh to protect them from beaver damage. This will be necessary until an adequate stock of trees is present to withstand beaver activities.

2. Photopoint Picture Taking. Photopoint pictures were taken from 6 Meacham Creek photopoints and 34 Birch Creek photopoints. Five photopoints were discontinued on Birch Creek because of poor location.

3. Thermograph Data Collection. Thermographs were deployed at three locations on East Birch Creek and two locations on Meacham Creek. On East Birch Creek, thermographs were deployed at Westgate Canyon, the Houser property and the

McDaniel property. On Meacham Creek both thermographs were deployed on the Louisiana Pacific property and placed approximately 1 stream mile apart. All data was lost from the upper Meacham creek **thermograph because of condensation on the circuitry.** **See Appendix 1** for plotted thermograph data.

RESULTS AND DISCUSSION II. ADMINISTRATION

Reports

In compliance with our contract, monthly progress reports, and an annual progress report were prepared and submitted to BPA.

A draft written summary of fish habitat stream inventories completed by project personnel was prepared and submitted to W. Noll for review.

Purchasing

All materials were purchased for the fencing projects prior to the flooding. Since most new fencing projects were canceled, surplus fencing materials will be carried over into 1992. Electric fencing supplies and chargers were purchased for stream crossing fences and retrofitting on some high tensile fences.

Electric fencing units listed in the 1991-92 budget were purchased for less than \$290.00 each and therefore were not capital items. The utility trailer itemized in the 1991-92 budget was purchased.

Approximately 4,355 cubic yards of riprap stone and boulders were purchased for instream maintenance.

Budget

The annual 1992-93 budget and statement of work was prepared and submitted to BPA for approval.

The biologist prepared cost estimates for maintenance activities associated with May flooding and submitted them to Willie Noll for preparation of a contract modification. A contract modification was submitted to, and approved by, BPA.

Personnel

Guy Gregg was hired for three months as a seasonal Technician. His primary duty was to assist the permanent Technician with fence maintenance activities.

Program Development

Project personnel attended an annual habitat program review in John Day.

RESULTS AND DISCUSSION III. DISCUSSION

As a result of the decision to discontinue new project implementation on Mainstem Birch Creek, the Homer Peterson and Corinne Peterson leases were terminated. Implementation had not yet begun on these properties. Many meetings were held with Homer Peterson to work through the situation and come to the best resolution possible.

Flood waters totally destroyed the instream work implemented on the "Magic Mile" in 1969. It was determined by T. Bailey and W. Noll that the expenditure of funds necessary to stabilize this section of stream and/or maintain it for the life of the project were not justifiable as costs would far outweigh fisheries benefits. After several meetings with cooperating landowners, the decision was made to replace the active stream channel inside the leased riparian area this year, but that once this year's work was complete, no further instream work would be undertaken by ODFW. The landowners were given the choice of continuing to participate in the program with this understanding. The Britt lease was terminated because a clause in this lease requires ODFW to continue to maintain the channel within the leased area and the landowner's basic discontent with ODFW's position on future instream work. All other participating landowners have chosen, at this time, to remain in the program.

A major fill and removal violation was found to have occurred on the William Weinke property along Mainstem Birch Creek (Figures 16 and 171. Approximately 1,300 feet of stream was channelized without permission from ODFW. Wood Fiber Industries (an adjacent landowner) was found to be responsible for committing the violation. Wood Fiber Industries, as required by DSL, has since worked cooperatively with T. Bailey to develop a five year restoration plan to mitigate for damages. Wood Fiber Industries will pay for and implement the restoration plan.

A verbal agreement was made with Opal, Gary and Loyd Rhinhart allowing them to have some instream work done on their project area other than what was implemented by ODFW. Substrate had built up so high in two locations along the Rhinhart property that normal high water would send the stream flowing over their cropland. While ODFW did not feel responsible for doing this work, permission was given to the landowner to deepen the channel in these locations and do some stabilization work.

INTERAGENCY COORDINATION

A good relationship with the Soil and Water Conservation District (SWCD) is crucial to landowner support of the program. Project personnel attended monthly SWCD meetings.

The Biologist coordinated with the Division of State lands and Army Corps of Engineers on obtaining fill and removal permits for project work as well as work that participating landowners wished to do on their own. A considerable amount of time was spent accomplishing this task.

The Biologist coordinated with USFS personnel from the Ukiah ranger district to locate a source of blowdown trees to be used as root wads and log weirs. Since flooding caused a dramatic change in kinds of instream work required, the trees were not purchased.

Project personnel participated in a tour attended by ODFW, USFS, and CTUIR representatives to review completed and proposed fish habitat improvement projects in the Umatilla subbasin within each agency's area of jurisdiction.

The Biologist attended a floodplain management workshop given by the Federal Emergency Management Agency to review requirements of instream work within federally insured floodplains.

The Biologist attended a meeting with representatives from the Army Corps of Engineers, DSL, and city and county officials to review fill and removal regulations regarding repairing of flood damaged streams.

The Biologist met with Barry Draeger of the Federal Emergency Management Agency to make an on-site inspection of flood damaged projects and provide cost estimates for repairs.

The Biologist met with Carl Scheeler of CTUIR to discuss fish habitat program philosophies and futures direction.

The Biologist attended a meeting with representatives of SPA, ODFW, USFS, and CTUIR to discuss program status and future direction.

The Biologist attended a tour of CTUIR habitat improvement work on the Umatilla River completed in 1991.

The Biologist attended the SPA funded field review by William Platts, Bob Beschta and Boone Kaufmann of Grande Ronde and John Day subbasin fish habitat improvement projects.

An on-site meeting was held on the William Weinke property with Army Corps of Engineers and DSL officials to inspect the fill and removal violation committed by Wood Fiber Industries.

REFERENCES

- Northwest Power Planning Council. 1987. Columbia River Basin Fish and Wildlife Program.** Portland, Oregon.
- Oregon Department of Fish and Wildlife, USDA Forest Service, and **Confederated Tribes of the Umatilla Indian Reservation. 1988. Umatilla River Drainage Anadromous Fish Habitat Improvement Plan.**
- Oregon State Game Commission. 1963. The Fish and Wildlife Resources of the Umatilla Basin, Oregon, and their water use requirements.** Report of the State Water Resources Board. Portland, Oregon.
- Thompson, R.N., and J.B. Haas. 1960. Environmental survey report pertaining to salmon and steelhead in certain rivers of eastern Oregon and the Willamette River and its tributaries. Part I. Survey report of eastern Oregon rivers. Fish Commission of Oregon, Fish Research Project, 14-17-001-1'78, Completion Report, Clackamas Oregon.**
- U.S. Fish and Wildlife Service and National Marine Fisheries Service. 1982. Eastern Oregon Anadromous Fish Habitat Restoration Project. Umatilla River Basin Planning Aid Report. Portland, Oregon.**

APPENDIX - 1
PHOTO ESSAY



Figure 3. Photopoint 3 on Meacham Creek Louisiana Pacific property, October 1990.



Figure 4. Photopoint 3 on Meacham Creek Louisiana Pacific property, October 1991 displaying no negative impacts from May flooding.



Figure 5. Photopoint 4 on Weatgate Canyon **Creek** Louisiana Pacific property, October 1990.



Figure 6. Photopoint 4 on Weetgate Canyon **Creek Louisiana** Pacific property, October' 1991 displaying scour from May 1991 flooding.

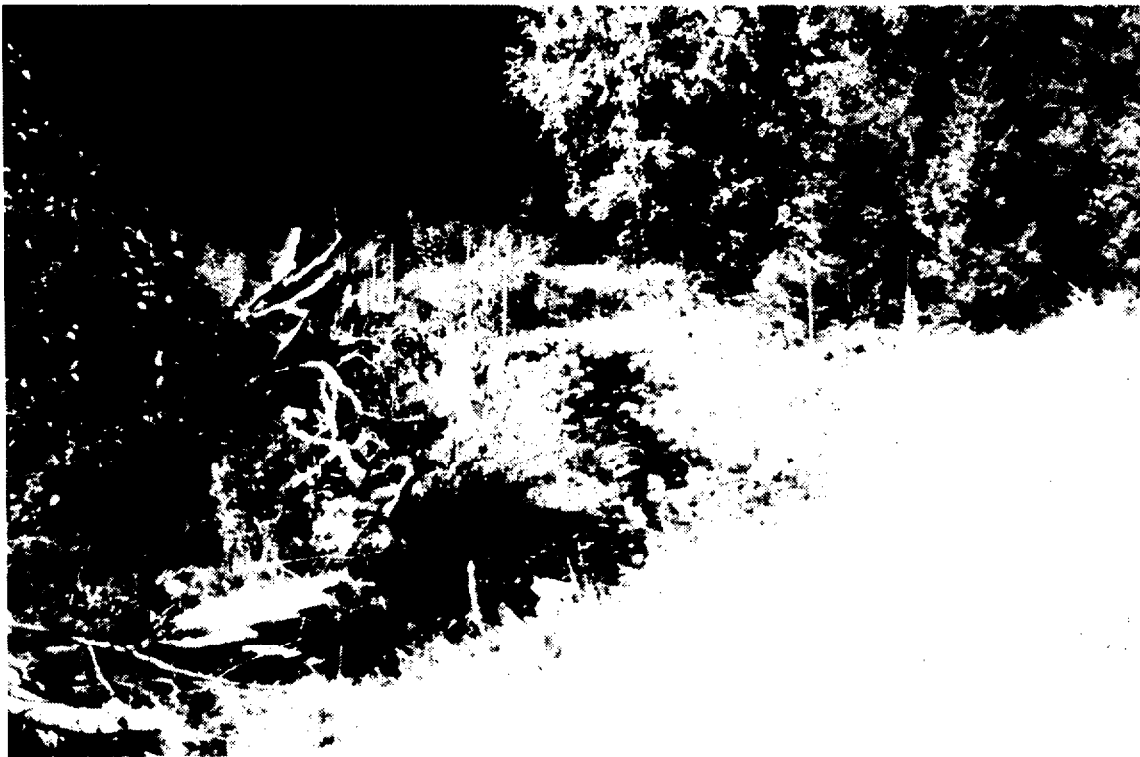


Figure 7. Photopoint 8 on Westgate Canyon Creek Louisiana Pacific property, October 1990.



Figure 8. Photopoint 8 on Westgate Canyon Creek Louisiana Pacific property, October 1991 displaying scour from May 1991 flooding.



Figure 9. Westgate Canyon Creek stream crossing fence displaying downcutting of channel. Prior to flooding, wood panels were within 12 inches of the water surface.



Figure 10. Photopoint 5 on East Birch Creek Houser property, September 1990.



Figure 11. Photopoint 5 on East Birch Creek Houser property, October 1991 displaying scour from May 1991 flood.



Figure 12. Photopoint 6b on East Birch Creek Houser property, September 1990.



Figure 13. Photopoint 6b on East Birch Creek Houeer property, October 1991 displaying scour from May 1991 flooding.



Figure 14. Flood damage on East Birch Creek Britt property (Magic Mile) the week after peak flood flows, May 1991. Active channel outside riparian corridor fence.



Figure 15. Flood damage on East Birch Creek Snider property (Magic Mile) the week after peak flood flows, May 1991.



Figure 16. Photopoint 3 on Birch Creek **William** Weinke property, September 1990.



Figure 17. Photopoint 3 on Birch Creek **William** Weinke property, October 1991 displaying **illegal stream channelization** completed by Wood Fiber Industries.



Figure 18. Flooding on Birch Creek Gambill property the day after peak flows, May 1991.



Figure 19. Flooding on Birch Creek Gambill property the day after peak flows, May 1991.



Figure 20. Flooding on Birch Creek Gambill property the day after peak flows, May 1991.



Figure 21. Flooding on Birch Creek Gambill property the day after peak flows, May 1991.



Figure 22. Photopoint 2 on Birch Creek **Hemphill** property displaying average spring flow, March 1989.



Figure 23. Photopoint 2 on Birch Creek **Hemphill** property the day after peak flows, May 1991.

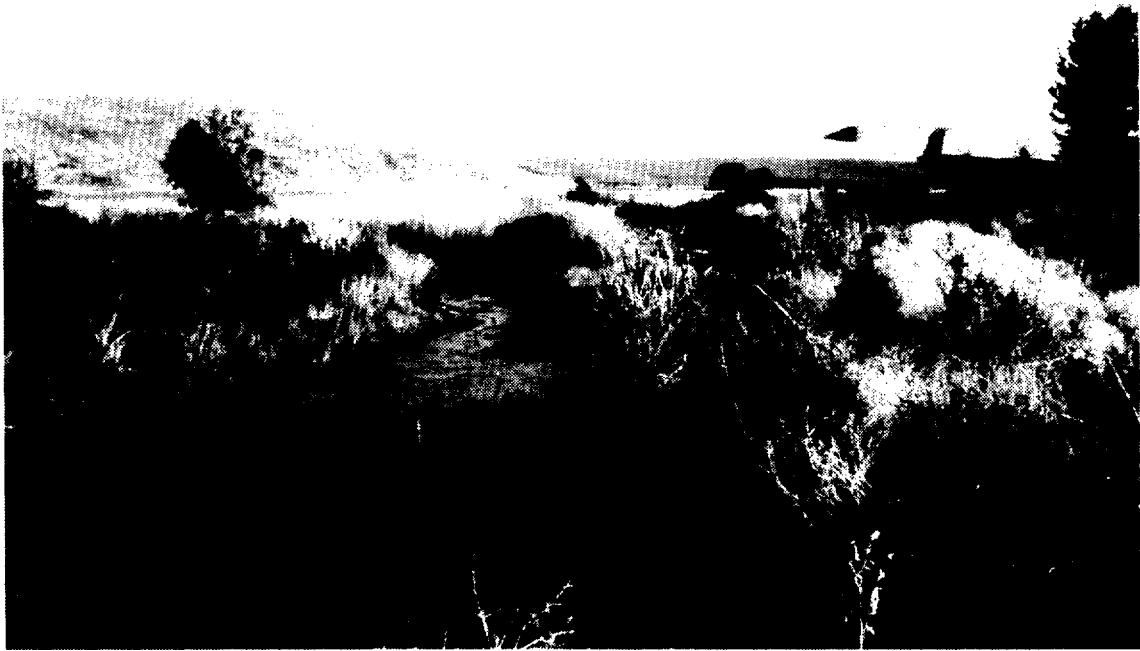


Figure 24. **Photopoint Ib** on Birch Creek Rhinhart **property**, October 1990.



Figure **25**. Photopoint Ib on Birch Creek **Rhinhart property**, October 1991 displaying scour from May 1991 flood.



Figure 26. Damage to riparian corridor fencing on the Birch Creek McDaniel property resulting from the May 1991 flooding.

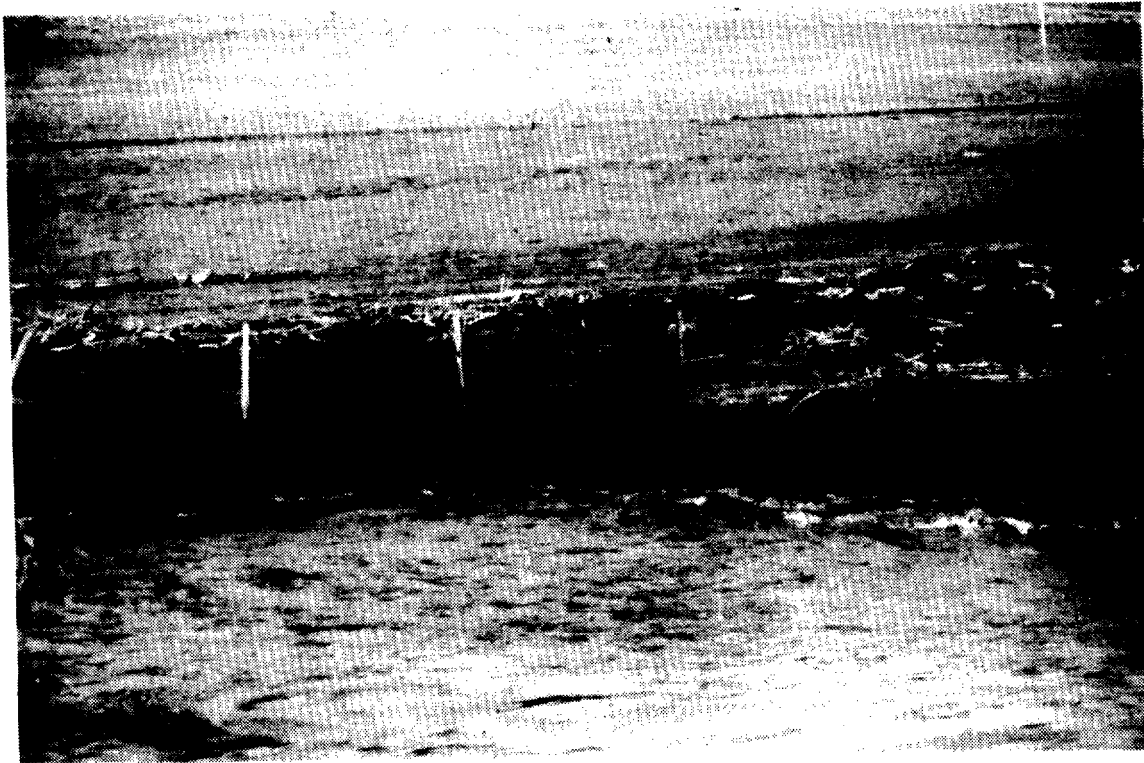


Figure 27. Damage to riparian corridor fencing on the Birch Creek McDaniel property resulting from the May 1991 flooding.



Figure 28. Photopoint **2a** on **Birch Creek McDaniel** property, September 1990.



Figure 29. Photopoint **2a** on Birch Creek **McDaniel** property, October 1991 **after** May 1991 **flood**.



Figure 30. Photopoint 1 on Birch Creek Jim Straughan property several hours before peak flood waters, May 1991.



Figure 31. Photopoint 1 on Birch Creek Jim Straughan property, October 1991 after completing instream work.



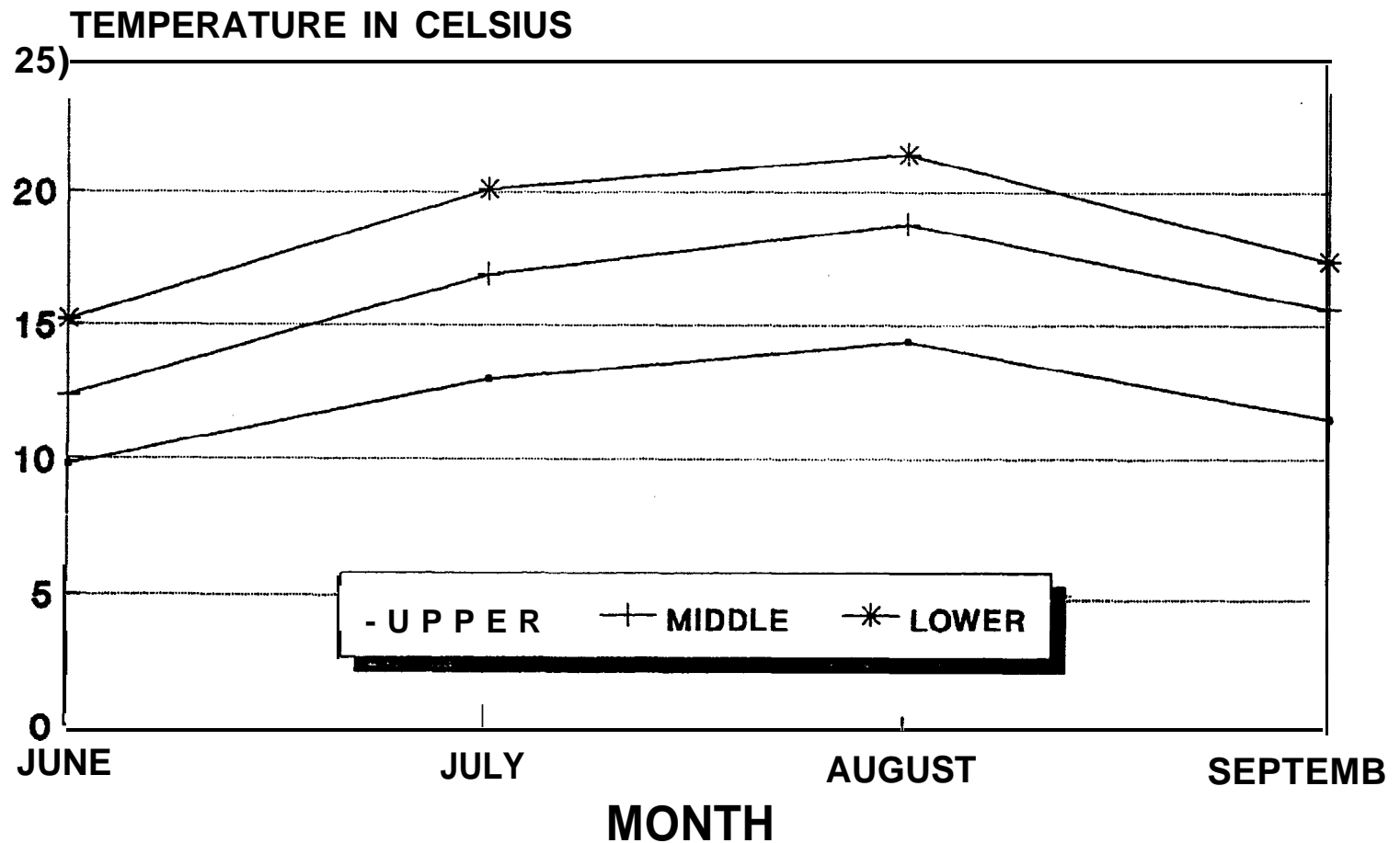
Figure 32. Damaged watering gap and riparian corridor fencing on Birch Creek F. Straughan property the day after peak flows of May 1991 flooding..



Figure 33. Birch Creek F. Straughan property several hours before peak flow of May 1991 flood.

APPENDIX - 2
THERMOGRAPH DATA

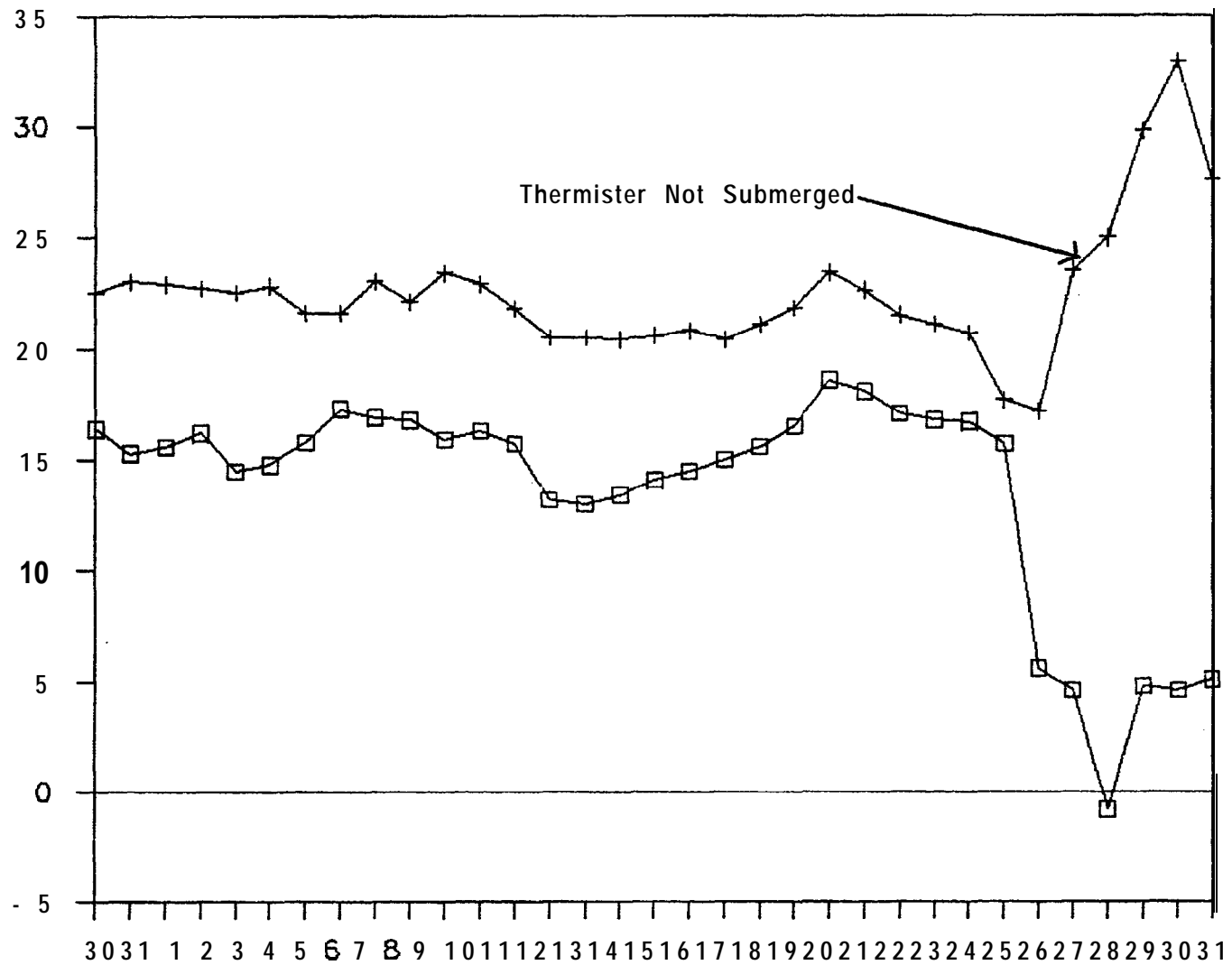
EAST BIRCH CREEK MONTHLY MEAN TEMPERATURE



LOWER MEACHAM/LP

JULY 30 - AUGUST 31

TEMPERATURE IN CELSIUS



□ DAILY MINIMUM

DATE
+ DAILY MAXIMUM